

## Homework 8

1. Evaluate determinant of the following matrix

$$A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}.$$

2. Show that the determinant of following matrix  $A$  is nonzero and then find its inverse, where

$$A = \begin{bmatrix} 0 & 2 & 4 \\ 2 & 4 & 2 \\ 3 & 3 & 1 \end{bmatrix}.$$

3. Using Cramer's rule, solve the following system of linear equations,

$$\begin{aligned} 2x_2 + 4x_3 &= 2 \\ 2x_1 + 4x_2 + 2x_3 &= 3 \\ 3x_1 + 3x_2 + x_3 &= 1 \end{aligned}$$